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Article

The Contribution of Tourism to Sustainable Rural Development in Peripheral Mining Spaces. The Riotinto Mining Basin (Andalusia, Spain)

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Abstract: The crisis of mining-industrial activities in Western Europe since the middle of the 20th century caused the cessation of mining, triggering a structural crisis. It is necessary to look for alternatives, among which tourist activities based on mining heritage stand out. However, there are unattractive peripheral spaces in which new activities encounter obstacles to their development, facing the post-industrial and rural crises. The Riotinto Mining Basin (Huelva, Andalusia) represents an example of such spaces with an enormous cultural heritage. A central agent, the Río Tinto Foundation, has opted to enhance tourism value, while the mine has recently been reactivated. The objective of this research is to analyze the contribution of mining tourism to sustainable rural development. The methodology applied has been mixed based on conducting interviews and analyzing secondary data. The results are (a) achievement of the tourism value of the mining heritage; (b) difficulties for tourism to overcome its peripheral condition; (c) relative contribution of tourism to the improvement of the territorial image; (d) lack of coordination among stakeholders; (e) limited contribution of tourism to sustainable rural development, moving to a secondary economic role after the reopening of the mine.

Keywords: boring peripheries; mining tourism; rural destination; stakeholders; sustainable rural development

1. Introduction

Since the middle of the 20th century, the progressive closure of mines has occurred due to the loss of competitiveness due to the increase in international competition, low profitability, high production costs, the fall in the price of minerals, the energy crisis, the issues of environmental degradation and the progressive reduction in the use of fossil fuels [2,3]. The cessation of mining is dramatic economically, institutionally, socially and culturally [4], generating uncertainty, management difficulties and a severe structural change in regional development [5], causing unemployment to widespread and social tensions [6]. Mining regions are stigmatized in a context of environmental and landscape degradation, soil contamination, deterioration of facilities and speculation [6–9]. In this context, adaptation and adaptability become necessary to face a new reality with alternative proposals and solutions to reactivate the local economy [4,10] and improve the territorial image [9]. A restructuring process begins that lasts decades [5,11], with new industries or activities that initiate a new development process. Simultaneously, many internal voices link the future to the reopening of the mines as a promise of employment and economic reactivation [12,13], which gains strength in the current global context (environmental crisis, electrification, energy crisis, invasion of Ukraine, etc.).

It is necessary to design public policies to address the restructuring of mining areas [10]. The EU applied different instruments from the Regional Policy, Cohesion Policy and Structural Funds (European Regional Development Fund (ERDF) and European Social Found (ESF)). In 1986, Objective

No. 2 regions (declining industrial regions, mainly urban) were created in the areas where the Industrial Revolution occurred [11]. Its recovery involved abandoning the productive monopoly and betting on economic diversification with new options in particular contexts [10,11,14]. However, the scenario of rural mining spaces was different [9,15]. They fell within Objective No. 1 regions (regions where GDP per capita is below the 75% threshold of the EU average) with the arrival of ERDF funds, the LEADER initiative and later EAFRD, in addition to some specific re-industrialization and diversification programs [16].

The first reaction to the closure of the mines was, in many cases, to return to the natural landscape with environmental restoration [14,17], later incorporating new activities for environmental, socio-cultural and economic sustainability [17]. However, sometimes "positional evils" were chosen, acting in mining spaces as if they were inert and vacant, building industrial waste management facilities [18].

On the other hand, in a context in which the EU and heritage institutions defend and promote the vision of cultural heritage as potential in the place, public policies argued that industrial-mining heritage (IMH) could be an effective endogenous resource for the territorial development [19]. Thus, it is proposed to act against heritage degradation [6,9] and incentivize new activities that allow job creation and stop demographic bleeding [5].

The processes of conservation, rehabilitation and enhancement of the IMH have been diverse, with the IMH acquiring a monumental, museum and didactic function [9], which is often based on adaptive reuse [20]. Thus, post-mining spaces are reinvented as a cultural objective [21–25], but also as a strategy to preserve cultural heritage and improve the environmental, socio-cultural and economic dimensions of sustainability [26].

The culmination of the processes to enhance the IMH is the declaration as a UNESCO World Heritage Site (WHS), which began in 1978 with the declaration of the Wieliczka Salt Mine (Poland) [10]. On the other hand, the designation of mining spaces as Geoparks by UNESCO also highlights their geological characteristics.

However, the conservation of the most notable sites, the enhancement of the IMH and heritage protection are not in themselves solutions for mining territories, as they generate little or no economic dynamism [9,27]. Thus, heritage tourism is used as a strategy or opportunity for economic revitalization, diversification and substitution of activities [3,6,7,9,10,28–33] and to improve the image of the territory [28,30]. In addition, tourism is conceived as an instrument for financing the rehabilitation and conservation of the IMH [17,30,32], which justifies the recovery processes [10], the (re)valuation of local identity and the landscape [28,34]. This process shows the interdependence between heritage management and tourism development [35–38] since it frequently seems that "the development or "creation" of a heritage tourism attraction is a last resort and sometimes the only possible solution" [7](p.345). However, touristification will not be exempt from the opposition between conservation and commercialization [35,39,40], between trivialization and authenticity [41], appearing the paradox of "creative destruction" [39].

It is a form of industrial heritage tourism [7,15], which we will call Industrial Mining Heritage Tourism (IMHT). This modality has proliferated while industrial-mining landscapes acquired an "aesthetic of deindustrialization" [7]. It was first developed in the Industrial Belt of Europe, where the First Industrial Revolution took place, appearing consolidated for decades in the United Kingdom, Germany, the Netherlands, Belgium, Sweden, Poland, Austria and France [7,9,19,25] and later in the industrialized periphery in the area of the Second Industrial Revolution, i.e. Southern Europe [9,25]. Since joining the EU [11], initiatives have multiplied in Central-Eastern Europe. The importance of the IMHT is evident in the European Route of Industrial Heritage (ERIH), an expression of a creative activity [42] in which a multitude of mining places appear to visit [3]. Furthermore, the WHS brand has national and international influence in the development of IMHT products, the marketing of heritage destinations [43,44] and the Geoparque brand is projected to be related to new demand segments [45].

The size of the IMH and its degradation has motivated most of the comprehensive intervention and tourism use projects launched to start from public initiatives at different scales or are supported

by them through various plans [14,15,33,46]. There are examples in which local authorities have carried out restructuring policies [11,47] with varying success, as they have sometimes been taken over by regional or state bodies [47]. Thus, different governance models have been generated [9]. A unique model is the management through Foundations of diverse public, private or mixed nature present in the Ironbridge Gorge Museum Trust [48], which has served as a model for many others. In general, the intervention has been carried out with community and public funds, but the international economic crisis and public debt, generated the withdrawal of investments [14] and the need for private investment.

The development of tourist activities around the IMH has been complex, given that there are very diverse stakeholders of different natures, with multiple relationships and interests, whose actions are conditioned by the ownership of the mines, the legislative framework, administrative barriers, including lack of legal protection and lack of coordination between departments [4,9,14,25], and local identity and culture [4,34]. Therefore, cooperation at different scales and of varying nature is necessary, e.g. public-public, public-private and private-private, which is not always achieved [4,5,9,25] and the presence and participation of local public and private actors, committed and aware of the new processes [3,9,10,25,31,43,46]. In this sense, the formation of networks [17] has achieved successes, such as the creation of ERIH, which is based on INTERREG [42].

Generally, the transformation of the IMH into a resource and its subsequent integration into new IMHT products and destinations follows a similar structure [15,46]. It starts from the museum or interpretive centre and then develops products based on the characteristics of the place and old industrial-mining infrastructures [4,49] to form a "mining park" [9,15]. Visits are included to productive activities on the surface, e.g. open pit mines, terraces, and waste dumps, or underground, processing and transportation activities, e.g. ships, docks, trains and tracks, and roads, and socio-cultural facilities, such as offices, housing, and shared services [7]. Regarding them, differentiation is sought with other more or less complex products such as living history, historical and theatrical recreations [15,50], the tourist narrative of former mine workers [51–53], thematization and recreation, e.g. outdoor sports or nature reserves, detached from the mining event and decontextualized [21,52] or the generation of routes at different scales [3,19]. Thus, creativity and active consumption progressively gain importance over the heritage resources themselves and passive consumption [4], which means moving from tourism focused on the past to one of the experiences, more oriented to popular and mass culture [54].

From a demand point of view, the IMHT is developed in the context of market segmentation, which responds to the demand for heritage preservation, cultural experiences and non-mass spaces where mines occupy the central role, i.e. focal point [4,46]. It is intended for specific market segments, such as educational, family, social, and business [19,55], yet specialized attractions can also be offered, e.g., to railway enthusiasts [56].

The success of experiences such as Ironbridge Gorge, Zollverein, Bochum Museum or Wieliczka has generated expectations and initiatives have multiplied throughout Europe [3,9,15,25,29]. The usefulness of the IMHT in conserving the IMH is evident [10]. However, a series of issues and limitations emerge in the enhancement of the tourist value of the IMH [10,32], generally due to the lack of planning and management based on rational and sustainable principles [31]. Firstly, the question of attractiveness appears in terms of the importance of the whole and uniqueness because not all mining sites are accepted by tourists in the same way [7]. Secondly, the demand is minor [3,7] and although it continues to grow, it generates few overnight stays, although sometimes the cost is high [7–9], which complicates the creation of accommodation [8] and the generation of tourist destinations [9,15]. Thirdly, there are difficulties in generating tourism products from the IMH [15,19,25], which has led to hardly original products with content and experiences are repeated [9,21,25,31,33,57], impacting on not always positive tourist experience [21]. Fourthly, substantial continuous public investments are necessary to cover the vital implementation costs, i.e. rehabilitation of the IMH, enhancement of tourism value, use and maintenance [15,58,59] and product creation, including marketing and promotion [59] with the low return, long repayment terms and little guarantee of viability that further complicate private investment [7,46], while in crisis contexts

these public funds and investment are withdrawn [14,59]. Fifth, the need to invest in human resources training or attracting new employees [59] presents difficulties in places with demographic issues [5,60], especially in the tourism sector where employment is often precarious and poorly paid [61]. All this determines that the scope of the IMHT in terms of economic rejuvenation, fixation of the population and socio-cultural benefits is limited [5,7,9,19,29], despite expectations and its consideration as a panacea [15].

Moreover, geographical location, e.g. urban, rural, inland and coastal, and spatial centrality, e.g. distance to sending centres and other tourist destinations - urban, coastal, etc.-, accessibility and connectivity, conditions the development of the IMHT. In this way, rurality and peripherality to adapted and well-known economic and tourist circuits play against tourism development above other factors [2-4,7-9,16,19,22,25,33,62], even when WHS statements exist [3,46]. Thus, the rural post-mining spaces, which were the result of peripheral industrialization [9,21], add to the issues related to mining tourism and overall tourism development of dull or intermediate peripheral rural areas [63,64] in which the uniqueness and exoticism of attractions exert considerable influence on individual travel priorities [65,66], as visitors must allocate more time and expense to access and participate in experiences compared to other more accessible and cheaper attractions [65]. In this way, the greater the isolation, the greater the uniqueness and attractiveness for tourism to be viable [65]. Otherwise, it will be necessary to resort to grouping complementary resources [66] capable of attracting autonomous tourism [67], which sometimes will be incidental, i.e. stops along the way, and other times with a purpose, i.e. visiting a specific attraction [66].

Furthermore, rural spaces must face their issues with proposals for "rural development from within", where endogenous resources must replace exogenous resources in rural development policies [68]. Multifunctionality and diversification are proposed as strategies for community policies for rural development, taking the community into account and their capabilities [69]. It is a "sustainable rural development" (SRD) that involves sustainable management of natural resources and the socio-economic development of rural areas and communities [70,71]. However, in practice, it has often resulted in an indicative superstructure that is more intended to finance projects concerning particular objectives than overall visions [72]. Therefore, the effects of rural development have been uneven, and the differences between central and peripheral rural areas have increased [73], which do not have better results, even if they receive more funding [74]. Furthermore, peripheral rural mining spaces are subject to external pressures from global capitalism. In this context, mining in peripheral rural areas recovers in the face of new industrial and economic processes, signalling a new economic framework regarding competitiveness, environmental, socio-cultural and re-industrialization. Mining is seen as antagonistic to tourism [75] and other traditional activities [12], but also as an activity with multiple positive and negative relationships with tourism [76] or it is an opportunity for tourism with visits to active mines [77].

Therefore, this research aims to analyze the tourist activity in the Rio Tinto Mining Basin (RTMB) (Andalusia, Spain) where the Rio Tinto Mining Park (PMR) is created, considered a successful IMHT initiative in Spain [9,15,33,46,60,78,79] and taking into account that mining activity has restarted since 2015. To this end, research questions are posed: How has the IMH been given tourist value? Who and how have participated in the process? Has tourism been an instrument of multifunctionality and diversification for the DRS? What happens in heritage-listed mining sites in a scenario of mining re-industrialization?

2. Materials and Methods

2.1. Methodology

The study of the existing relationships between heritage, tourist and recreational activities and sustainable rural development recommends the use of case analysis [38,64], analyzing tourism in peripheral, intermediate areas [38,64,66,74] and the IMHT [4]. In-depth data collection from various sources is used to conduct the analysis [80].

A semi-structured interview was designed, raising 13 questions (q) that allowed the identification of other vital issues to gather opinions and perceptions of stakeholders [4,38] were raised on four topics (Table 1): (a) the role of stakeholders and the relationships between them [81]; (b) the enhancement of tourism value of the IMH [4]; (c) the development of the IMHT [4,79,82]; (d) the effects derived from IMHT [4,38,82,83], development contexts and rural and local development processes [38,66,83].

Table 1. Interview questions.

Code	Question	Topics
q1	What role does your entity have in tourism in the RTMB?	(a)(c)
q2	Do you identify your territory with mining tourism? Why?	(a)(b)(c)(d)
q3	What projects have you launched (or supported) for the heritage/tourism enhancement of the region/municipality?	(a)(b)(c)
q4	What heritage projects/tourism enhancement does your entity plan (or will support) in the region/municipality?	(a)(b)(c)(d)
q5	Who should we look to for the development of tourism?	(a)(b)(d)
q6	What functions does the Río Tinto Foundation have in the destination? Which are, from your point of view, the most important?	(a)(b)(d)
q7	What singularities does the mining tourism management model have in the region?	(b)(c)(d)
q8	What are the instruments used for the development of mining tourism?	(b)(c)(d)
q9	What can you say about promoting and developing tourist activities (companies and products) in the region?	(b)(c)(d)
q10	What projects related to tourism (or not) have been launched in your municipality?	(b)(c)(d)
q11	What is the future of mining tourism, given the reactivation of mining?	(a)(b)(c)(d)
q12	What has been the situation of tourism activity during the COVID-19 pandemic?	(b)(c)(d)
q13	Future proposals for improving tourism in the region	(a)(b)(c)(d)

(in italics are those questions that complement or offer secondary information about the topic studied). Authors' elaboration.

In total, 12 interviews (Int) were carried out, 3 with two people from the same institution simultaneously (Figure 1). The interviews were carried out between July 2021 and July 2023, in person, online (Meet©) and by telephone. The conversations were transcribed. Although they were contacted, conducting interviews with politicians and/or technicians from the municipalities of Zalamea la Real, Berrocal and Campofrío was impossible.

Intervention area	Nature		
	Public	Mixed	Private
Local	(Int01) Town council Technician M El Campillo Online	(Int04) Town council Town councillor/Technician F/M Minas de Riotinto Online	(Int11) Company (restaurant, hostel/Business association) Owner M In person
RTMB	(Int08) Town council Town councillor F Nerva In person	(Int10) Town council Mayor M La Granada de Río-Tinto Telephonic	(Int02) LAG Manager M Minas de Riotinto Online
Regional	(Int03) Guadalinfo Technician F Minas de Riotinto Online	(Int06) CAIDF Technicians F/M Nerva In person	(Int12) Foundation Río Tinto Museum Director/Manager M/M Minas de Riotinto In person
International	(Int09) CAIDF Technician F Minas de Riotinto In person		(Int07) Foundation Alaya Mining Technician M Minas de Riotinto Online

Legend

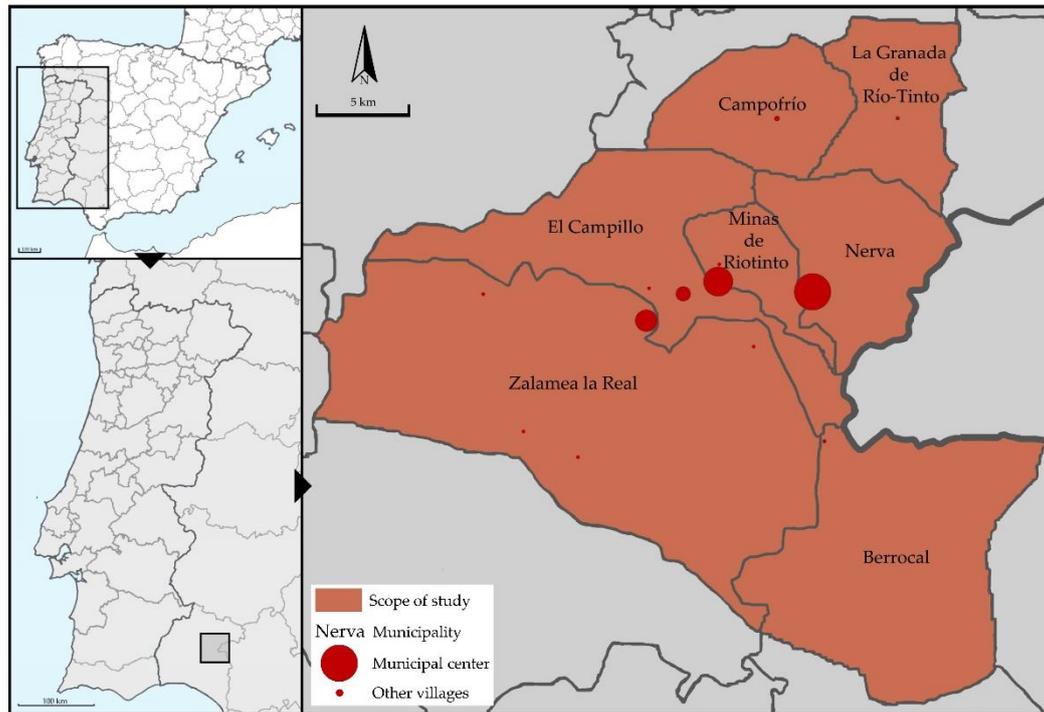
(Interview)
Position
Gender
Municipality
Interview channel

Figure 1. Interviewed according to their intervention area and nature. Authors' elaboration.

The information obtained was complemented with an intense territorial recognition and secondary sources focused on (a) the heritage characterization, the enhancement of tourism value (published sources, planning documents, internal documents of companies and organizations); (b) and the analysis of results using statistics [84–86].

2.2. Scope of study

The RTMB is a region located in the central-eastern section of the province of Huelva (Andalusia, Spain) (Figure 2). It receives its name from a river with acidic, reddish waters called Tinto. The RTMB has an area of 627.25 km² and consists of 7 municipalities: Berrocal, El Campillo, Campofrío, La Granada de Río-Tinto, Minas de Riotinto, Nerva and Zalamea la Real.



Municipality	Surface (km ²)	Population					Density (inhabitants/km ²) 2022
		1960	2022	Δ 1960–2022 (%)	≤ 14 years (%) (2020)	≥ 65 years (%) (2020)	
Berrocal	126.43	816	302	-63.00	3.96	33.33	2.39
Campofrío	47.06	1303	742	-43.05	11.64	23.56	15.77
El Campillo	90.88	3711	2018	-45.62	12.40	22.38	22.21
La Granada de Río-Tinto	44.77	430	254	-43.93	11.93	22.63	5.67
Minas de Riotinto	23.35	8436	3738	-55.69	11.52	22.51	160.09
Nerva	55.48	12,686	5100	-59.80	12.23	21.90	91.93
Zalamea la Real	239.28	5780	3026	-47.65	10.54	23.51	12.65
RTMB	627.25	33,162	15,180	-54.22	11.18	24.26	24.20
Huelva Province	10,145.50	399,934	528,763	24.36	15.21	16.85	52.12

Figure 2. Scope of study and their territorial and demographic characteristics. Source: [85]. Authors' elaboration.

It is located to the W of Sierra Morena, in the South-Portuguese geological unit, rich in polymetallic compounds that give rise to the Iberian Pyritic Belt (230 km long and 45 km wide). Its mineral wealth has almost continuously motivated mining and metallurgy (silver, copper, gold, sulfides) to be developed in the RTMB since the Chalcolithic 5000 years ago [87].

The first period of mining splendour in the current RTMB was the Roman period (1st-century BC-5th century AD). The second was the British (1873-1954) in which the mines would achieve international fame, with the Rio Tinto Company Limited, which established a colonial model similar to the one that developed in areas of the British Empire [88]. It marked the arrival of mining capitalism with new forms of production relations [89]. This mining development did not occur equally throughout the RTMB, with the southern and northern municipalities specializing. However, they had minor mining activities in agriculture, forestry and livestock farming to meet the needs of mining activities, and the population concentrated in the central municipalities (Minas de Riotinto, Nerva and El Campillo) [87].

Mining specialization led to a deep crisis in the middle of the 20th century. In this context, the nationalization of the mines by the Spanish State occurred (1954), the relocation of industrial activities to the provincial capital occurred (1960s), and the effects of the energy crisis of 1973 were suffered [79]. In 1986, it closed the copper line [90] due to profitability below the "break-even", but the gossan line of gold and silver continued. Since 1992, the gold market crisis led to employment regulations [90]. In 1995, a Labor Limited Company was established, which maintained the gossan line and

reopened the copper line, but the drop in prices since 1998 meant a decline in activity [79]. In 2001, mining-metallurgy activity ceased [79], restarted in 2015 due to the rise in the profitability of copper, expected to continue for the next few decades.

This millennial mining-metallurgical activity has left a "handmade landscape" [87] with an immense IMH scattered in open pit mines, underground galleries, tailings and slag heaps, railways, machinery, industrial constructions and services, etc. [79].

The crisis of traditional activities produced a demographic drain on the RTMB, aggravated by its peripherality and the process of coastalization of economic activities [60,79]. In 2022, it had a population of 15,180 inhabitants [84], having lost 54.22% of the inhabitants since 1960 (Figure 2), going from 8.29% of the provincial population to 2.87%. The average density is 24.20 inhabitants/km² (2022), with marked contrasts between the central municipalities and the rest. It has a low birth rate and significant population ageing, which results in high dependency rates. Added to this is a negative migratory balance, similar to other deindustrialized regions [9].

The development of mining involved the construction of a narrow gauge railway to the port of Huelva. Since 1968, it progressively lost functions, i.e. transport of workers and travellers, and closed in 1984 [91,92] leaving the RTMB connected with the provincial capital (Huelva) and regional capital (Seville) and the tourist areas of the Sierra to the North and the Coast to the South through conventional first and second highways level, being an intermediate space.

3. Results and Discussion

3.1. Responses to the mining crisis

Since 1873, the RTMB has been developed under the business paternalism of the Río Tinto Company Limited (the Company) [79]. In the municipality of Minas de Riotinto, a factory city, the Company owned everything [79]. The nationalization of the mines did not substantially change this situation of dependency. The crisis of polymetallic mining until the cessation of activity represented a path towards an unproductive, subsidized space, which had to look for alternatives [4,5,10]. To subvert the crisis [5,11], a series of measures and public actions [10] were implemented in the RTMB after the arrival of democracy in Spain (1977), the creation of the Autonomous Community of Andalusia (1981) and the incorporation of Spain into the EEC (1986).

First, public services were strengthened. Thus, the regional Ministry of Health inaugurated a regional Hospital (1984) and secondary educational services were reinforced [79]. Accordingly, it implied the attraction of qualified labour and a certain dynamization of restaurants, accommodation and real estate offers.

Joining the EU meant the arrival of funds, i.e. ESF, ERDF and, now, EAFRD, and community initiatives, especially LEADER, EQUAL and INTERREG, which were accompanied by national programs, i.e. PRODER in Spain. For its management, the region created a development network [60,79,93]. In the 1990s, a public consortium between the seven municipalities established the Commonwealth of the Mining Basin [93]. In 1992, the Local Action Group (LAG) was created as a public-private Rural Development consortium that participates in all programming periods [93]. Afterwards, different territorial services of the regional ministries were implemented to develop employment, training and diversification programs through entrepreneurship [90,93]. Of this entire structure, only the LAG and some regional agencies survived the international economic crisis [93].

For economic diversification and the creation of a business network [4], since 1988, Riotinto Minera SA has acted as venture capital in new companies and activities (Int12). Thus, it created a large agricultural farm of citrus and fruit trees and industrial initiatives (Int12). The different administrations insisted on promoting industrial polygons to establish new industries [79]. Nonetheless, it was exogenous industrialization [90], which came in search of public aid and cheap land [79] and left "when the subsidies ran out" (Int01).

This way, dependence on the public sector, its investments and external initiatives were consolidated [79,90,93]. The RTMB continued to be an area in permanent reconversion and decline [90], awaiting the reopening of the mine [79,90]. Unlike other mining spaces, a long-term strategy

was not established to promote and foster economic, social and environmental processes [94]. Thus, in an unflattering context, diversification and outsourcing are proposed through the conservation of heritage and tourism [3,6,7,9,10,30–33].

3.2. *The tourist value of mining heritage*

In 1987, the Company Río Tinto Minera SA created the "Río Tinto Foundation for the History of Mining and Metallurgy" (FRT), a private non-profit charitable-teaching cultural foundation permanently. FRT's primary objectives were (a) the conservation, protection and restoration of the historical heritage generated by mining, (b) its subsequent putting into tourist use and (c) participation in projects [92]. FRT was endowed from the beginning with the liabilities of the mine, which represented a critical movable and immovable IMH, i.e. archaeological, mining-industrial, documentary and bibliographic, which since then it has recovered, restored, rehabilitated and put into value [79,92]. FRT takes the Ironbridge Gorge Museum (United Kingdom) and Bergbau Museum in Bochum (Germany) as its heritage model [92]. It also follows the Ironbridge Gorge Museum Trust (Int12) as a private management model for the IMH [48] in a context (Spanish) in which public initiatives predominate. This proposal for corporate patrimonialization [2] links educational purposes with the former mining company [4]. The patrimonialization process begins when mining is still active, and FRT survives the Company that created it (Int12).

The actions to enhance the IMH start by considering what heritage is [95] and it can become a point of attraction [96]. The management of the IMH encounters the issue of over-dimension [47], making it necessary to prioritize to act on it [20,94]. The first action of FRT is the rehabilitation of the Company's Hospital as the Río Tinto Mining Museum (MMRT), having to face the amortization of the initial investment [47] and continued financing [4], given that the primary income of museums comes from admissions [57] and this requires a continuous flow of visitors [47]. Thus, the relationship and interdependence between heritage and tourism arose [36,37]. Tourism income is allocated to heritage management [37] to cover rehabilitation, security, operational and maintenance costs and to meet the need for services, infrastructure and equipment (SIE) [4,47]. Throughout the process, a balance is sought between tourist activities (use) and the preservation and preservation of heritage self-imposed by FRT to meet its objectives (Int12), with a scientific heritage criterion, above the economic one (Int12). Still, it is necessary to self-finance the project (reinvestment) (Int12) since payrolls and suppliers must be paid, in addition to intervening in heritage elements without tourist use [79].

The transformation of the HMI into tourist resources and products was complex [43,97] as there are social, economic and environmental conditions [22]. In the 1989s, there was nothing to do with the IMHT in the RTMB; it was considered a mere opportunity (Int02). In 1992, FRT launched the Riotinto Mining Park (PMR) (Figures 3 and 4), the first initiative of this type in Spain [9,15,21,33]. The PMR is proposed as an instrument to enhance the tourist value of the restored IMH and to generate an economic alternative in the RTMB [33,92]. The PMR is composed of the real estate and personal property recovered by the FRT and put into tourist value (Figure 3) as adaptive profitability [20]. It has the representation of productive activities (open pit mines; underground tunnel), processing activities (workshop area recovery), transportation (railway, railway infrastructure) and sociocultural facilities (hospital, housing) [7]. The central elements of the PMR appear before the cessation of mining activity, being the MMRT, the Mining Tourist Railway (FCTM) and the Corta Atalaya open pit exploitation. All visitors pass through the MMRT, with a historical tour of mining from Prehistory to the cessation of activity. The success of the FCTM is explained by its conservation and preservation of authenticity and its commercial viability, which allows high demand satisfaction [98]. Open pit exploitations have limited attractiveness [9], but Corta Atalaya is the largest in Europe, which gives it uniqueness [46] as an example of the transformation of nature [77].

		MUNICIPALITY			
		Minas de Riotinto	Nerva		
MINING HERITAGE OF VALUE	Productive activities	On surface	Corta Atalaya (1992–2004; 2021) ①③⑤ Open pit mine (1873–1994), largest in Europe (1200x900 m) ■■■	Peña del Hierro (2004) ①③④ Open pit mine (closed in 1966). Winch and rehabilitation of the electrical machine house. 4 km hiking. Natural Monument (2010) ■■	Mars on Earth (2021) ②⑦ Visit to research sites for Mars exploration and other space missions (NASA, ESA, CAB...) ■
		Underground	Roman mine reproduction (2001) ①②③④⑤⑦⑧ Reproduction of a Roman gallery and mineral extraction (in the Mining Museum) ■	Tunnel Santa María (2004) ①③④ Access tunnel to Peña del Hierro (200 m) ■	
	Processing activities			Visitor Reception Center (2017) ①③④ Former workshop of the Pilonos Group (2010). ■■	
		Transport	Mining Tourist Railway (1994) ①②③④⑤⑥⑧ Narrow gauge mining railway (1875–1984). Recovered 11 km stretch of road. 5 locomotives in running order (2 steam – run on the first Sunday of each month – and 3 diesel), 6 cars. Infrastructure ■		
	Socio-cultural facilities		Mining Museum Ernest Lluch (1992) ①②③④⑤⑦⑧ Mining hospital (1927–1983) 17 rooms. Prehistory until 2001. Geological sample; railway; printing ■	House No. 21 (2005) ①②③④⑤⑦⑧ Victorian house (1882). British staff housing ■	San Carlos Housing Group (in progress) Worker's house in Peña del Hierro ■

Legend

Mining Museum	Mining Tourist Railway	Short Watchtower	Peña del Hierro (complex)	Mars on Earth
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① Package 1 (Mon to Sun). ② Package 2 (Tue, Thu, Sat). ③ Package 3 (Mon to Sun). ④ Package 4 (Mon to Sun). ⑤ Package 5 (Mon to Sun). ⑥ Package 6 (Mon to Sun). ⑦ Package 7 (Tue and Thu; limited places). ⑧ Mining Museum-House No. 21 (Mon to Sun). ⑨ Moon Train (full moon days in summer; limited places). Stakeholders involved in enhancing tourism value: ■ FRT; ■ Regional Ministry of Environment; ■ Minas de Riotinto City Council; ■ Atalaya Mining.

Figure 3. Structure of Rio Tinto Mining Park. Source: [79,88,91,92,99,100]. Authors' elaboration.

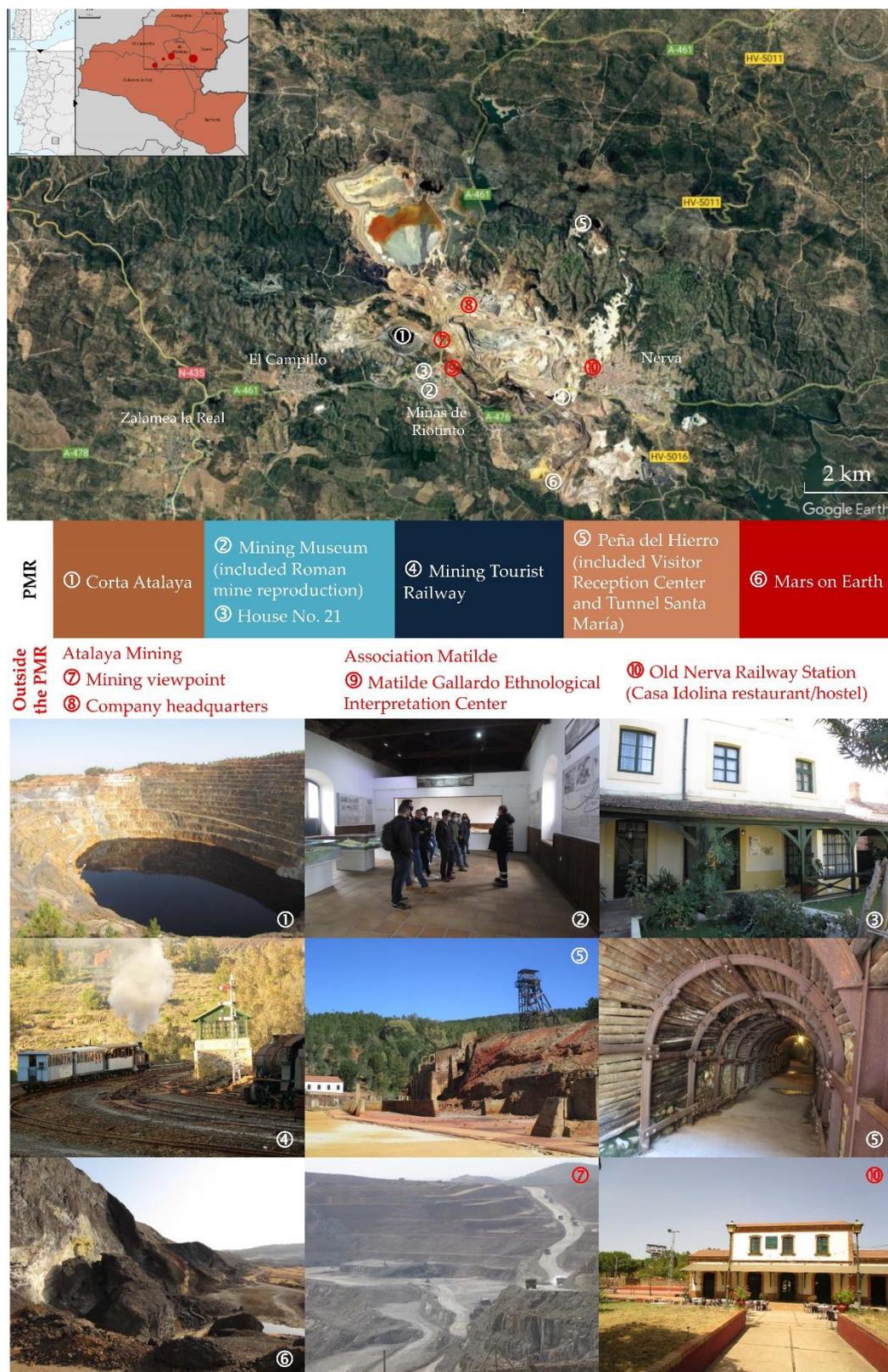


Figure 4. Distribution of tourist products in the RTMB, concentrated in the municipalities of Minas de Riotinto and Nerva. Source: [79,88,91,92,99,100]. Google Earth© image. Photographs A. Delgado-Domínguez and authors. Authors' elaboration.

In addition, the other open pit mine that can be visited, Peña del Hierro, is declared a Montera de Gossan Natural Monument (MNMG) and mining workshops are recovered as a Visitor Center. Thematic elements are incorporated into these static attractions, such as "creative improvement"

[101]: "Mars on Earth", which allows you to visit places where work has been carried out in the extreme environment of the Tinto River [102], declared protected as a Río Tinto Protected Landscape (PPRT). Tourist attractions are expanding from offering a single tourist package [15] to offering several (Int05, Int11, Int12), which allows the diversification of markets, segments and products (from an audience specialized in IMHT to a broader one), as a sustainability strategy [103]. However, creating new attractions is prolonged, from idea to implementation and opening to the public, due to heritage-protection, legal and financial issues (Int01, Int12). From a marketing perspective, the PMR focuses fundamentally on a specific historical period [4] from 1873 to 2001.

Apart from the PMR, as an offer from IMHT there is only a small Matilde Gallardo Ethnological Interpretation Center (Minas de Riotinto) that explains the mining way of life in a traditional workers' home (19th century), managed by an association and unrelated to the PMR (Int01). For its part, the new mining company, Atalaya Mining, through the Atalaya Riotinto Foundation (FAR), makes a "living industry" proposal, with professional (technical and scientific) and school visits, but also a viewpoint on the road from where you can observe the operation of the mine and the blasting (Int07).

The development of the IMHT was identified with the offer of accommodation, restaurants and other services for tourists [4]. In 2023, there were 26 tourist accommodations with a total of 379 beds (Figure 5) [86], with a sharp decrease in beds (-64.68%) compared to 2010 [79]. The accommodation offered in the RTMB is very scarce, as in other areas of IMHT [9,33].

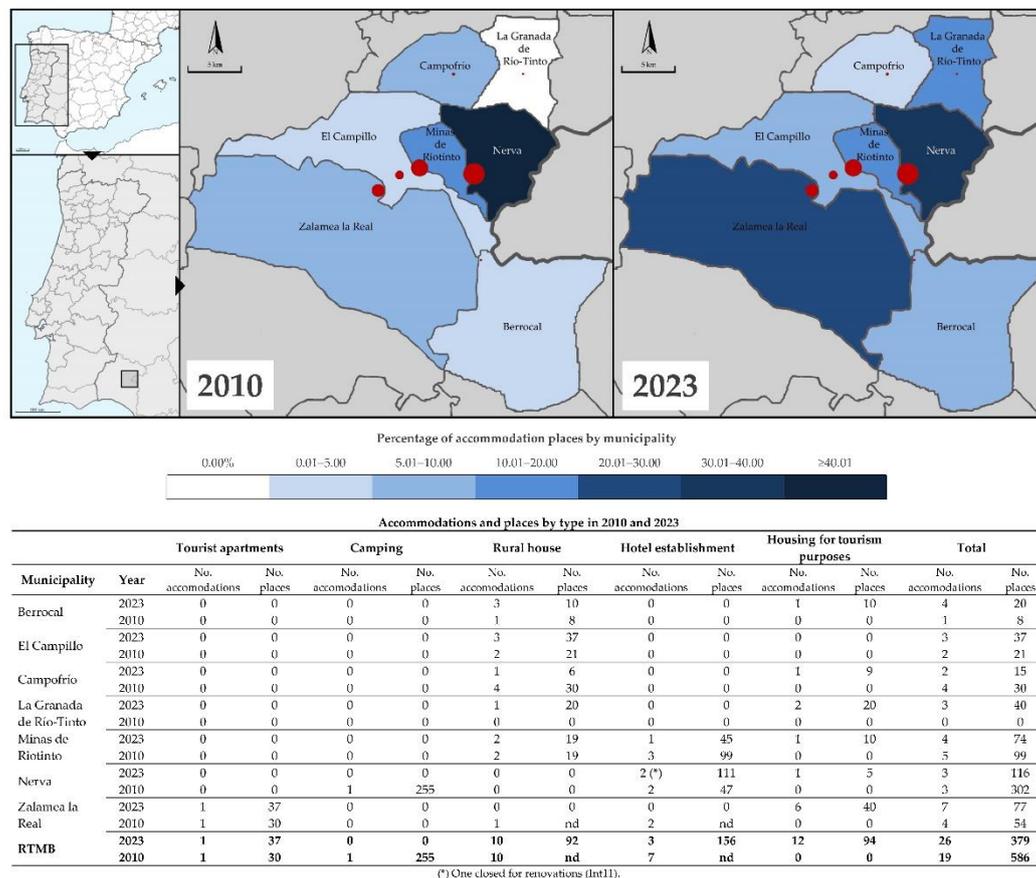


Figure 5. Accommodation offer in the RTMB in 2011 and 2023. Source: [79,86]. Authors' elaboration.

The most important accommodations (2023) are tourist homes (46.15%) and rural houses (38.46%), but 41.16% of the places are distributed among three hotel establishments, which are the only ones that have the capacity to accommodate groups (≥ 45 seats), this being a notable obstacle (Int01, Int03, Int06, Int08, Int12). The current offer of places is concentrated in the municipalities of Nerva (30.60%) and Minas de Riotinto (19.53%), being linked to the IMHT (Int02, Int11), while the rest are purely rural (Int02, Int10). Four accommodations in IMH complexes respond to the orientation of the IMH rehabilitation towards SIE for tourism [9,40]. Except for one hotel from 1987,

all the accommodations were created after 2001. The LAG co-financed the implementation and improvement of most of the accommodations (Int02), generating a network of all types (hotels, campsites, rural houses) since 1995 (Int02), similar to other rural mining areas [104]. Nonetheless, activity cessations due to non-viability are recorded (Int02), especially during the international financial crisis (Int06). Since 2015, the appearance of new accommodation was limited, due to the demand for real estate by mine workers (Int12). All accommodations are privately promoted. Those that were promoted by the municipal (a campsite) and regional administration (a hotel) have failed (Int06, Int11, Int12). For their part, the municipalities talked about the promotion of parking for motorhomes (Int01, Int04, Int08) due to the increased demand since the pandemic (Int03, Int06), seeking financial support from FAR (Int07). Creating electric charging points is also proposed as a tourist initiative (Int04). These proposals align with the development of autonomous tourism [67], but their contribution to the IMHT is questionable.

There are 49 restaurant establishments with about 1,000 seats, which cannot cope with the peak demand (Int01, Int02). They are concentrated in the most populated municipalities (Nerva and Minas de Riotinto) (Figure 6) and are also the ones that usually receive visitors from the PMR (Int01, Int06, Int11, Int12). There are only six establishments with capacity for groups (≥ 45 people), 4 of them in Minas de Riotinto, which is also the municipality where the demand from the reopening of the mine is concentrated (Int11, Int12).

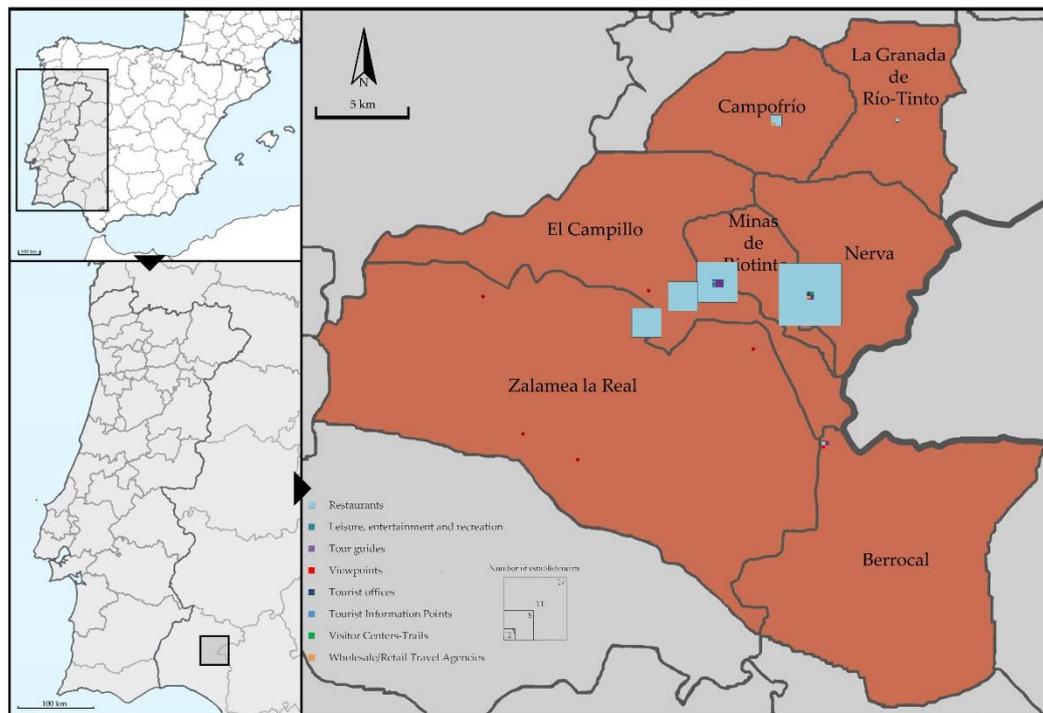


Figure 6. Restaurants and other tourist services in RTMB. Source: [85]. Authors' elaboration.

The rest of the tourist services are even scarcer (Figure 6) and for decades initiatives were co-financed and later ceased its activity (Int02). Four tour guides and one "leisure, entertainment and recreation activity" (this is the PMR) are registered [86]. There are no incoming agencies or activity companies (ecotourism, active tourism), but foreign companies offer services.

The municipal SIE are a tourist office and a tourist information point pending opening with the support of FAR (Int04, Int07), while others are closed or have not been materialized (Int01). Apart from the Peña del Hierro Visitor Center and the trail (regional Ministry of Environment, but managed by FRT), there are no other public facilities in the PPRT.

The situation of SIEs is practically the same as a decade ago [79]. There is a deficiency in the supply of restaurants and services as a business opportunity [57], conditioned by being a transit point (near the road) and seasonality (Int01, Int02), with low profitability and fixed costs [57].

The PMR has received a continuous flow of visitors, accumulating 1,768,703 since its opening in 1992 (Figure 7). The PMR stands out on a Spanish scale within the IMHT [33,46]. The increase in visitors indicates its consolidation [66], robustness and ability to withstand high levels of visitors [35], demonstrating its viability with a relatively modest investment [65].



Figure 7. Visitors in PMR (1992-2022). Source: [105]. Authors' elaboration.

Visits to the PMR have experienced ups and downs due to [79]: (a) opening/closing of new attractions; (b) celebration of events (own and those of others); (c) meteorological variability (cold and rainy days/months/years increase visits, warm ones limit them); (d) effects of the international economic crisis and the pandemic. The heritage declarations (PPRT, MNMG, BZP) do not indicate an increase in visitors, nor does the inclusion in the WHS Tentative List. Since 2015, there has been continuous growth. Reopening the mine that year did not harm the number of visitors, but it has not been established if it had a positive effect. The COVID-19 pandemic and the restrictions imposed (2020 and 2021) plunged the number of visitors, registering growth when restrictions are eased (Int11, Int12). In 2022, the number of visitors from 2019 will recover.

In 2022, the PMR received an average of 265 visitors/day. Visits are concentrated in autumn and spring (Figure 8). The minimum number of visits is recorded in January, which falls to an average of 136 visits/day, while the maximum is April (Holy Week), amounting to 376 visits/day. Demand is concentrated on weekends (Int06, Int11). There is seasonality and a variable demand that does not spend the night (Int01, Int02, Int03, Int11), a general characteristic of the IMHT [7–9].

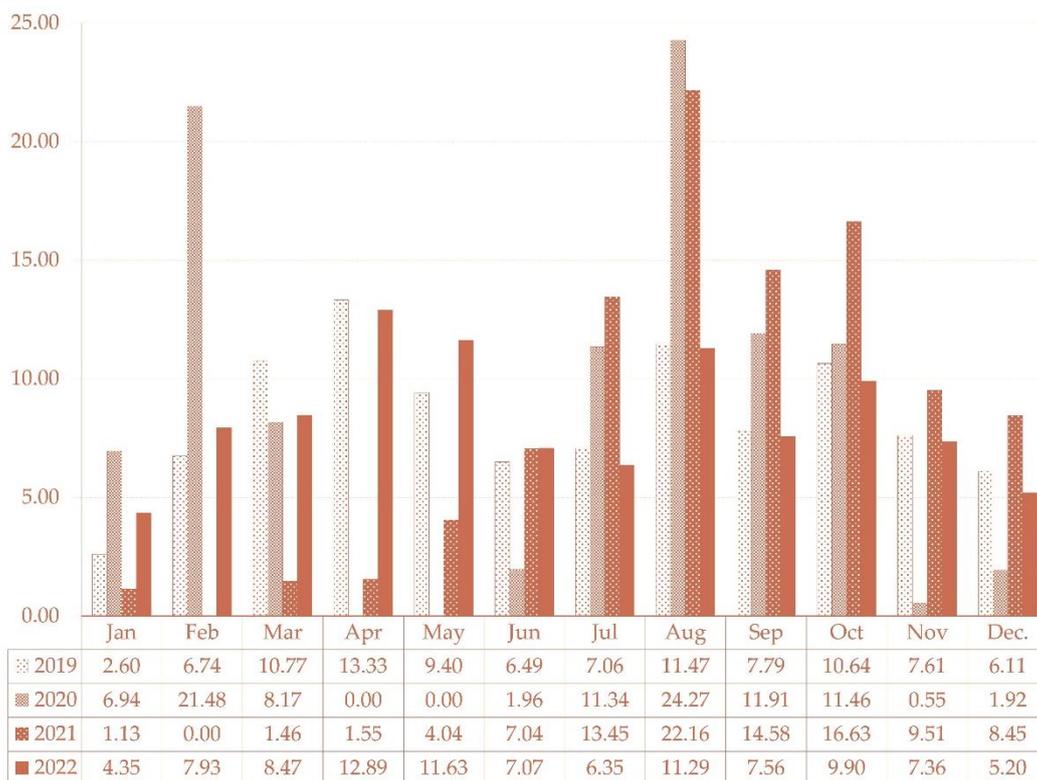


Figure 8. Distribution of visitors by month in percentages of PMR (2018-2022). Source: [79,105]. Authors' elaboration.

IMHT affects a wide range of visitors [56,106] and promotes the educational aspect of the IMH [4]. The type of visitors to the PMR remained stable (Figure 9).

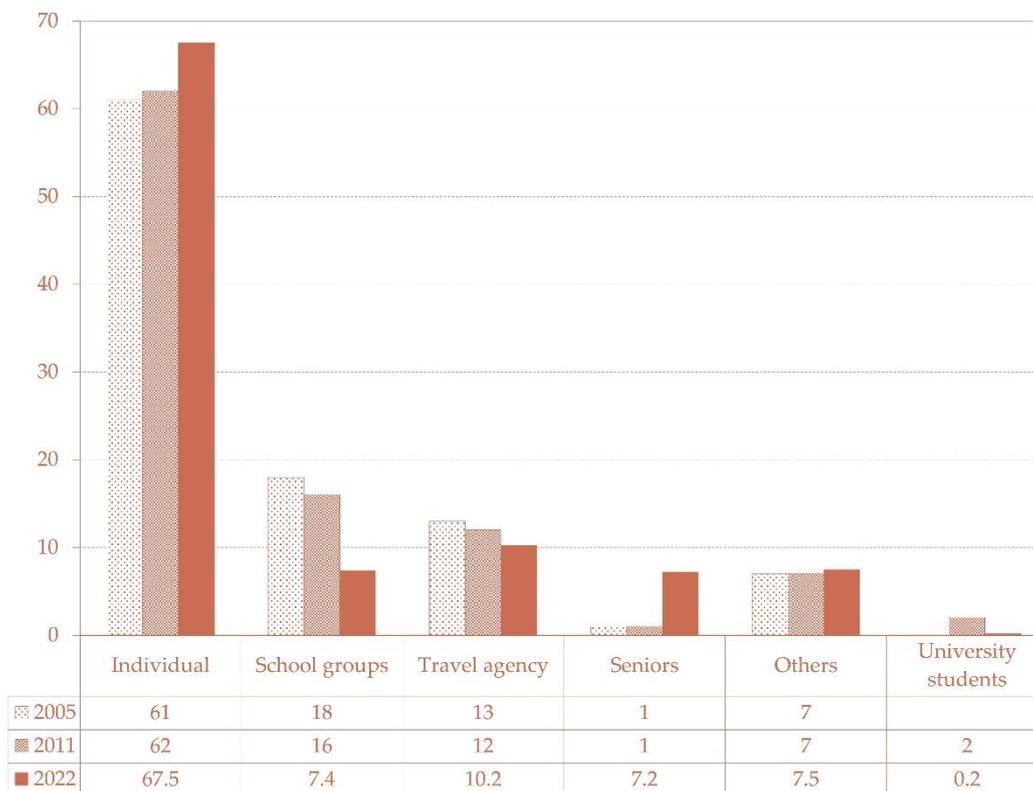


Figure 9. Types of visitors of PMR (2005, 2011 y 2022) (%). Source: [79,105]. Authors' elaboration.

Individual/family visitors predominated and grew (>60.00%), which shaped the nature of their experiences [44], being autonomous tourism [67] with incidental use [66], in transit between the coast and the Sierra, on weekends and holiday periods; highlights the visit of families with children as a way of approaching and experiencing a commitment to heritage [107]. Educational groups (provincial and extra-provincial) maintained PMR activity on weekdays [66], but their spending is minimal (Int06), and their relative weight decreases (the absolute number is stable). Organized groups tend to descend, generally from the nest areas of Seville or the Costa de Huelva, with cruise passengers arriving in Huelva joining since 2013 with a purpose [66]. University visitors are important qualitatively, but their relative importance decreased, responding to groups with a purpose [66], who sometimes look for accommodation (Int11). The elderly groups grew, combining incidental and purposeful use [66]. Overall, there is a tendency to increase visits with a purpose, with relationships existing between the type of trip/number of people/decision-making [106].

Considering the origin of the visitors to the PMR, around 80% are national tourists, with autonomous tourism predominating [67], including individual and family tourists, senior groups and educational centres. They are proximity groups (2-3 hours away), which link exoticism to the tourist experience, not to distance [108]. They are essential in the IMHT and are less vulnerable in crisis contexts [24], as demonstrated during the pandemic (Int12). Twenty per cent of the visitors are international (Int11), with German and British tourists staying mainly on the coast during the sun-and-sand season predominating.

The IMHT is limited in Spain, where sun-and-beach tourism predominates [33]. There is research that looks at other successful tourism models that present a biased vision of reality [109] or apply the life cycle to say that in the RTMB the tourism development process did not culminate or is in an initial phase [78,82,110]. This idea is repeated among the responders (Int01, Int02, Int09). However, it is necessary to attend to internal and external factors to understand the development of the IMHT [4,7,8]. Attractiveness [7,65] and specificity of the place (Corta Atalaya, FCMT, MMRT) makes it known [36] and visited [33]. The relative ease of access by own vehicle and the distance to consolidated tourist destinations [34] with large accommodation capacity (Seville, Costa and Sierra) and to a large city (Seville) (Figure 10), favour the PMR being a successful initiative [33]. Nonetheless, being an intermediate area conditions the formation of a tourist destination [63,64] and the creation of SIE given the predominance of visitors over overnight tourists [8,79]. In this way, it is a tourist space where transit supply and consumption are concentrated to which visitors arrive incidentally or with a purpose [66]. As an intermediate space, the PMR is a cultural and heritage site, at the centre of which are an MMRT and the Corta Atalaya, a specific heritage example, which have traditionally appeared as roadside attractions and murals in transit [66]. This issue is essential because the provision of SIE (Int01, Int02, Int04, Int06, Int08), the improvement of communications (Int01), the promotion strategies (Int11, Int12) and marketing (Int01), the segmentation (Int11) will increase consumption, the number of visitors, the expansion of segments, competitiveness, income, experience and satisfaction. Still, they will not necessarily increase the arrival of tourists willing to stay. However, products can be generated that extend the activity all day, such as the Moon Train (Int11, Int12), and generate demand for accommodation. In this way, it is not easy to advance in the formation of destiny [9,15] since attractions are created, but new activities and businesses are not generated, as has been observed in other places [4]. Thus, a paradox occurs: investing in SIE has difficult viability [7,46], but it is believed that having them generates their viability.

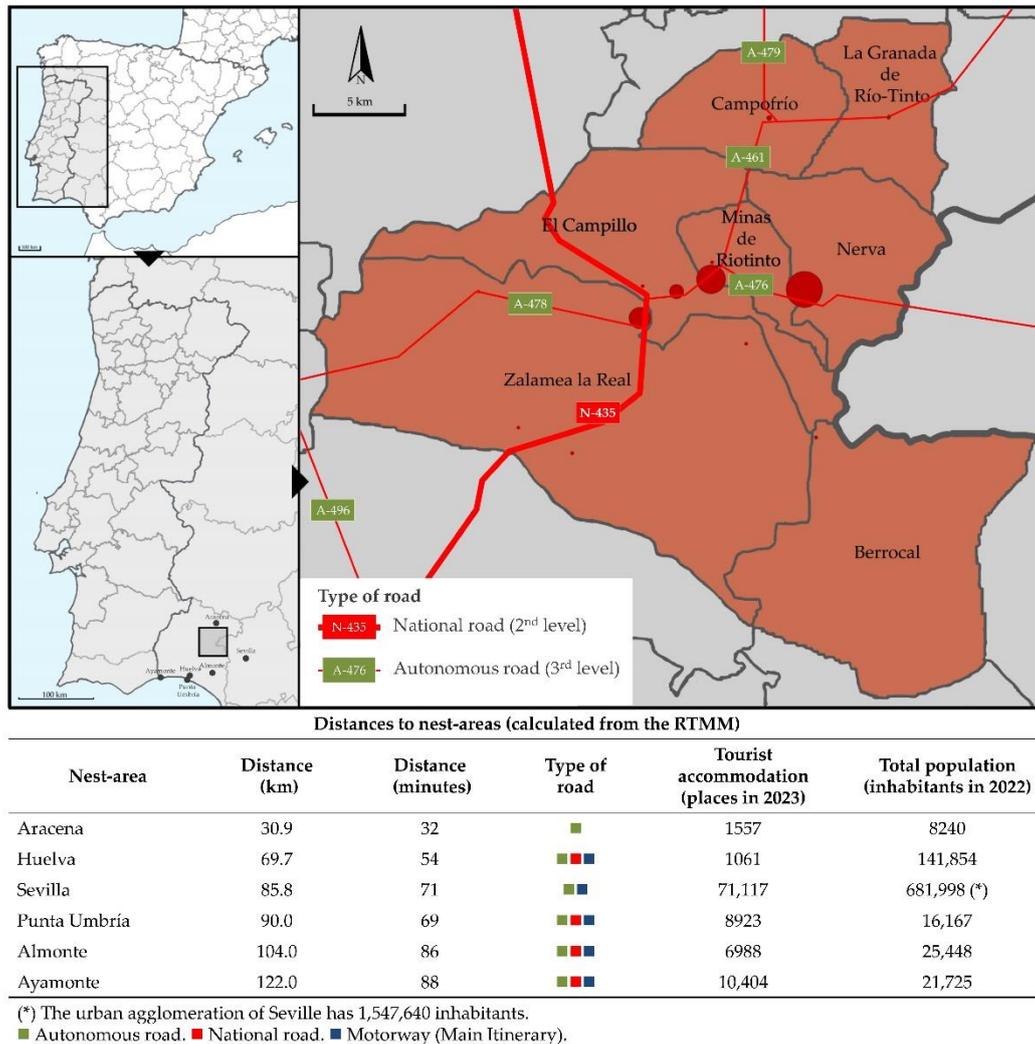


Figure 10. Communications and distance to nest/areas. Source: [85]. Distances calculated with GoogleMap©. Authors' elaboration.

3.3. Change of scenery

The different studies on IMHT in the RTMB [33,46,82] did not address reopening the mines. The first effect of the reactivation of mining on the IMH and the IMHT was the emergence of a new actor, Atalaya Mining, which related to the environment through FAR. For some of the respondents, mining activity for the RTMB meant employment (direct and indirect) (Int01, Int02, Int12), economic activation (Int01, Int02) and a brake on depopulation and ageing (Int01, Int02, Int06). Some attribute to the mine a *Deus ex machina* role so that the RTMB "has not succumbed during the pandemic, because the mine has continued working" (Int02), in a vision that coincided with other mining areas [12,13]. However, there is no unanimity and, for other respondents, betting on mining is doing so on monoculture and dependency (Int06), with the IMHT being an alternative to the mine (Int08) as an instrument of diversification [10,11,14,79]. Since its scope is much more limited than it was historically (Int05), and it conditioned the development of other activities (Int09), both traditional [12] and tertiary [76]. There is a gender and territorial contrast in the opinions of the informants. Women's view of mining is more negative, although not exclusive, and the most positive views are in the municipality of Minas de Riotinto.

For some of the informants, observing the current mining activity from the viewpoint enhances the IMHT (Int01, Int02, Int07), the landscape is an attraction and synergies are created (Int01, Int02, Int03, Int04, Int12), with live industry visits (school and company visits) at Atalaya Mining [111] being an opportunity for the mine and the RTMB [49]. In addition, Atalaya Mining develops a vital heritage

project within the BZP (Int07, Int12), applying compensatory measures of research, enhancement, dissemination and public use in different areas [111] for the enhancement of tourism value of the IMH (Int03), regardless of limitations, i.e. security, bureaucracy, and ownership [4,9,14,25]. However, for other informants, the reactivation of the mine meant that the IMHT options (Int09), employment and businesses linked to the IMHT (Int06) would decrease, as has been observed [76]. From FAR, it is understood that mining employment is attractive but that activities cease to work in the mine (Int07). In contrast, this effect has been observed in contiguous areas [83]. Furthermore, the demand for housing by mine workers caused an increase in the benefit of real estate income and prevented the creation of tourist accommodation, entering into competition [76].

It is necessary to consider that mining is always temporary (it is subject to profitability), short and medium-term (in the RTMB, for now, until 2030), and implies using the land and landscape after mining, intrinsic to the life cycle of the mine itself [112], so it is necessary to consider "new mining" in the future, understood as the use of mining know-how for recreational activities [51–53].

3.4. *Tourism and sustainable rural development processes*

A priori, there is a close relationship between the heritage mission and the principles of sustainable development. Nonetheless, this can be misleading [96,103], and it is necessary to reflect on the actual scope of enhancing the IMH and the IMHT on the SRD.

3.4.1. Socio-cultural dimension

The role of the local population in tourist activity is essential [113]. Although heritage conservation associations exist [34], their intervention in the IMHT is limited, partly due to the difficulty of presenting, financing and executing projects (Int05). Respondents perceived that the population has little social commitment to the IMHT (Int01, Int11, Int12). When IMHT is a thriving activity, society perceives more significant benefits than costs and a high degree of satisfaction, with those who are dedicated to IMHT being the most critical [110]. When the reopening of the IMHT mine becomes a secondary activity for the general population (Int06, Int09) the positive vision of those dedicated to the IMHT is reinforced (Int05, Int11, Int12). The social benefits are more limited than expected [19]. There is no perception of social saturation (overload) [110].

The sustainable relationship between tourism and cultural heritage depends on the heritage capital approach, authenticity, and interpretation [103]. The heritage issue benefits from enhancing the HML, but tourism considered as simple growth can endanger the physical nature of the heritage, its integrity, and inherent characteristics [114], causing deterioration due to human wear and natural decomposition. In this way, the debate between conservation and commercialization of heritage and culture appears [35,39,40], authenticity acquiring the status of a commodity, which is questioned in development processes [115], especially when the number of visitors is far above that of tourists. However, in the RTMB, this debate is not open, nor is it a transcript of the speeches, although at some moments, a trivialization occurs [41], prioritizing what tourists want [54] over the IMH [38]. The heritage management carried out by FRT is supported by the Certification in Sustainable Heritage Tourism Management (2023) [116].

On the other hand, when building values from the legacy of the past, it is not only about a generous understanding of it, but different actors with different interests use the past and its remains "to build the future they want" [12](p. 207). Alternative interpretations of the IMH are necessary to accommodate the local population's local and/or regional awareness of the IMH [31] to avoid the disconnection of the mine's knowledge with present and future generations. This allows the rejuvenation of cultural identity [17] and the overcoming of the concept of IMH in favour of "industrial culture" beyond heritage issues "by including contemporary or future cultural and creative resources" [117](p. 1), with relationships between past, present and future as opportunities for creative development [94,117]. However, this is complex in RTMB, given that the interpretive discourse changes with the reactivation of the mine, with a positive representation of the activity above its meaning (historical, social, environmental), as has been appreciated [13]. The RTMB has not taken a creative approach to developing living history activities [15,50], historical recreations [118] or

sporting events in heritage spaces [119]. Nor has there been a transmission of the past by its protagonists [51–53].

Tourism has been perceived as an instrument to establish and/or attract the population in peripheral areas [65,66,74]. The effects of the demographic crisis on the RTMB (Figure 11) have resulted in a lack of human capital [5,60]. The IMHT "has been an option only when the mine has failed, being the only alternative to depopulation" (Int05). However, the development of the IMHT has not generated a positive demographic dynamic. Only mining since 2015 has limited the decrease in the central municipalities. However, some workers reside outside (Aracena, Huelva or Seville) (Int05, Int06), while it is the peripheral municipalities that grow (COVID-19 effect and cheap housing) (Int10).

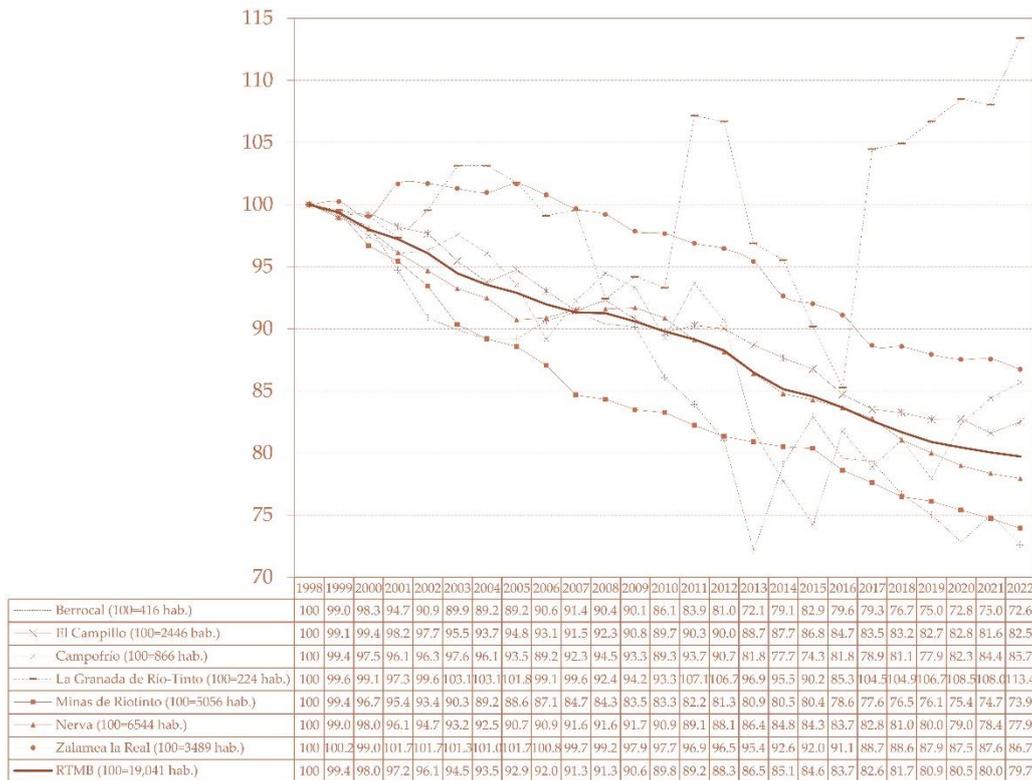


Figure 11. Evolution of the population (index numbers) in the RTMB (1998–2022), Source: [84]. Authors' elaboration.

3.4.2. Economic dimension

The economic dimension is the dimension of the SRD to which interviewees tend to pay the most attention.

The IMHT is proposed as an instrument for the diversification of the economy [7,25,59] and contributes to lower vulnerability [5], which shows how the informants (Int02, int05, Int11, Int12) interpret it and why all IMHT initiatives are supported (Int02). However, some point out that "tourism has not been considered of as one of the pillars [of the economy]" (Int05).

The issue of financing is essential [95]. The conservation, consolidation and rehabilitation of the IMH and its enhancement of tourism value generally depend on external financing lines due to the local inability to generate investment [9]. The amount of existing IMH [9,20], the high costs of intervention [15] and the impossibility of quick returns on investment [7] make the weight of private actors and local publics in the financing of projects less than that of the regional, state or community administration [15]. In this way, ERDF funds and other EU, LEADER and PRODER programs rose [120] through the LAG and the regional administration (Int02, Int05, Int12), although with varying success. Some informants agree that financing is the main issue (Int04, Int08, Int10). Still, some assume more responsibility than others [4] and better manage the funds they receive (Int01). The

investment is partly covered with own funds and generally receives co-financing from different administrations [15,58,59], especially with aid managed by the LAG (Int06), which has financed a large part of the tourism projects (Int02). Nevertheless, there is a deficit of local private investment (Int11) even though the commercialization of heritage products brings money to private stakeholders [37], "the little investment made in tourism comes from outside" (Int06, Int11). There are problems in finding real projects and private and public promoters (Int01). Although there is aid focused on tourism, very few initiatives are launched (Int01, Int02). Sometimes, the projects are not executed or done as initially proposed. (Int01, Int05). Similarly, there are funds, and one does not know how to spend them (Int01, Int05), resulting in an excessively bureaucratic system to manage aid (Int11, Int12). Furthermore, public funds have disappeared or are limited since the international economic crisis (Int01, Int02, Int12). FRT has managed 523 specific projects for the recovery of the IMH and its enhancement to tourism [92], receiving external support with subsidies and final aid (LAG, central administration, regional administration and Provincial Council).

The IMHT contributed to stimulating the formation of local service activities [29]. However, in the RTMB, a business network has not been created around tourism (Int02, Int11), with diversification and complementary income activities predominating and non-business activities above the main activities (Int01). These are micro-projects with micro results [60]. In this way, the private initiative has not come to support the FRT initiative. There are difficulties in making the restored IMH profitable [9] beyond the PMR visits that do not generate overnight stays, which complicates the business viability of restaurants and accommodations [66]. At the same time, establishments created with public investment and private management have proven economically unviable (Int1, Int05, Int06, Int09, Int11, Int12).

Concerning the above, it is common in post-mining spaces that entrepreneurship is very limited in touristification [4,9]. Other research intended to study the business ecosystem in RTMB [82]. Yet, in mining areas, it is complex since the historical legacy forms capitalist rural societies [89], dependent on the companies whose top-down management generates a poorly diversified business sector [121], which results in a lack of business culture [90]. It is necessary to understand that in a scarcely entrepreneurial context, with little initiative and without a business mentality (Int01, Int02, Int03, Int11, Int12), having initiative is an exception because one has always lived off the mine (Int01, Int04, Int05, Int06, Int12) and "a secure salary is preferred (...) in the mine" (Int06). For this reason, there are very few entrepreneurs (Int04, Int08), and those who exist often come from outside (Int06), and the superstructure does not favour entrepreneurship when it comes from outside (Int06, Int11).

Added to the lack of entrepreneurial culture is a culture of subsidy and apathy (Int11, Int12), generated by deindustrialization since "the business fabric has been generated around the mine" (Int12). Thus, there are underlying relationships between local culture and the agency [122], with the factory-city culture prevailing, which hinders change [122], with the opportunities for change being specific to the actor, as it is more resistant to institutional changes [122].

The predominance of sightseeing did not generate substantial benefits. Thus, quick profits are almost impossible [11]. Visits of more than one day are necessary to create more added value (Int06) and thus ensure that the population perceives a more considerable economic impact of the IMHT on development [32].

However, FRT, based on mining liabilities, generated economic assets through the PMR and financed itself with tourist income, heritage services external to the administration and companies, etc. (Int12), reinvesting the profits in the conservation, maintenance, rehabilitation and enhancement of the IMH (Int02, Int12) that consume most of its resources [4]. Public investment does not contribute to its economic viability but rather to generating projects, breaking with the dependence on public aid usual in these initiatives [9,46,47], being an income optimization model with direct reinvestment in the territory [113].

In general, the local population has low purchasing power (Int11). The PMR would represent 2.00% (estimated) of the declared gross income of the municipality of Minas de Riotinto, contrasting with areas in which it has been estimated at around 7% of income [123]. The mining reactivation has

increased the declared gross income, although it has not yet recovered from the 2008 level (Figure 12).

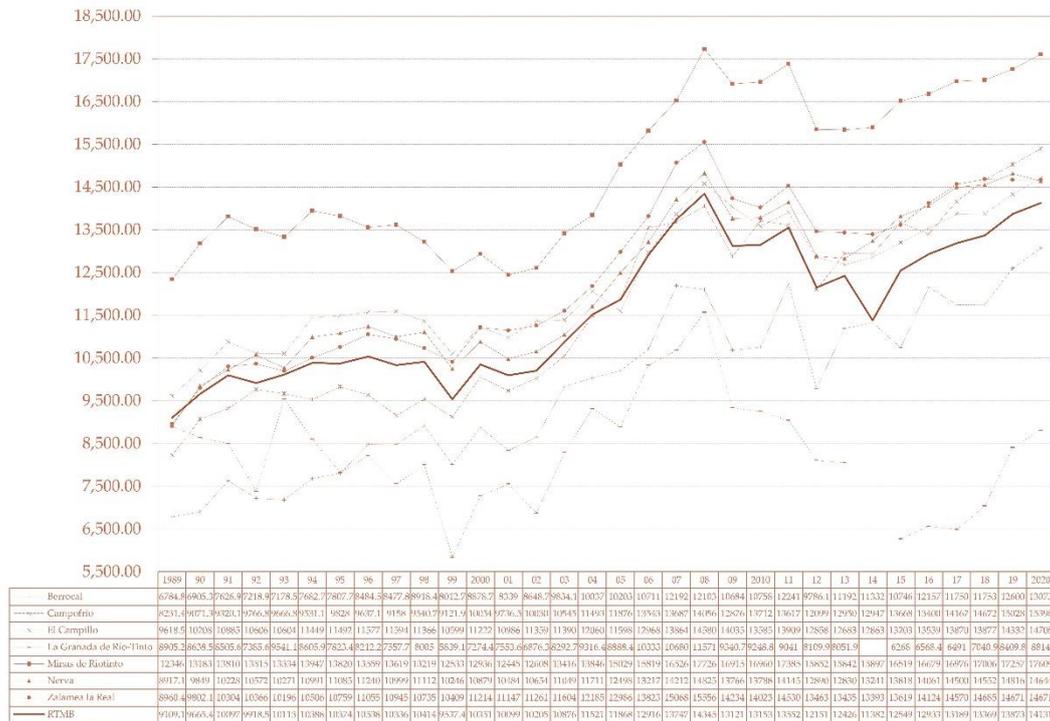


Figure 12. Evolution of the average income declared RTMB (2006-2022). Source: [85] Authors' elaboration.

Regional public services, such as regional hospital and education services, concentrate the bulk of employment, followed by the mine [85,124].

In the first year of the PMR (1993), the FRT employed six workers, including management staff, administrative staff and guides [7]. In 2021, the direct employment generated by FRT was 32 to 38 workers, between permanent and discontinuous permanent workers. Overall, FRT employment ratios were much higher than those of traditional museums. It primarily employed local workers with university and professional qualifications, predominantly women and young people (Int12), contrasting with other places hiring foreign employees [61]. The work of IMH rehabilitation and putting it into tourist use have become sources of employment [79,88], both direct and indirect [7]. More than a solution to the chronic unemployment problems [19], given that the effect is minimal compared to mining numbers [7,55], this could be considered an obstacle to the development of IMHT [59].

Direct employment in accommodation and restaurant companies is scarce and is often self-employment. Furthermore, part of the local population is not interested in employment derived from the IMHT (Int09) due to the lack of demand, seasonality and precariousness, especially in restaurants (Int06). Therefore, work in the mine is very attractive and competes for labour for the best salaries, making it challenging to attract and retain workers for the hospitality industry (Int11), as has been observed [61].

Overall, there has not been a change in the employment structure motivated by the IMH and IMHT and tourist activities since the increase in the service sector is due to public employment, in contrast to other mining areas [61]. Neither has it led to a general decrease in the unemployment rate, which has changed after the reopening of the mine (Figure 13). Thus, the importance of IMHT in employment is more qualitative than quantitative.

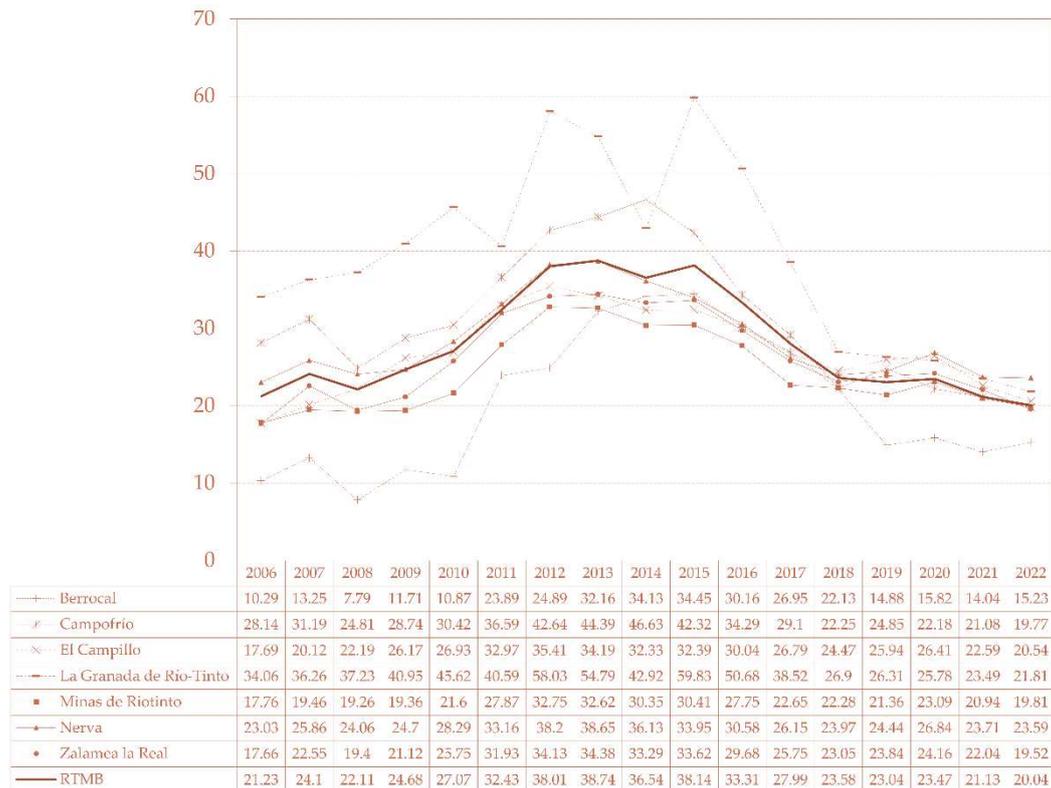


Figure 13. The Evolution of the unemployment rate registered in the RTMB (2006-2022). Source: [125]. Authors' elaboration.

Education and training are fundamental in the sustainable relationship between tourism and cultural heritage [103]. The intervention in the IMH and the development of the IMHT allows part of the highly qualified population, e.g. specialists in heritage, tourism, management, etc., to return and not emigrate [28]. However, the population lacks adequate training to occupy other positions in the tourism sector, e.g. restaurants and accommodation, in which professionalization is lacking (Int06), given that the original function is not tourism. There is a lack of experience in hospitality [59], appreciated by respondents as a weakness (Int01, Int06). No regulated training is offered in the Hospitality and Tourism branch, and the existing non-regulated training has disappeared (Int12).

The contribution to the recovery of the IMH and its enhancement to training is essential. Between 1988 and 2017, FRT, in cooperation with other actors (Junta de Andalucía, the LAG, etc.) (Int02, Int12), executed 18 employment training programs (Workshop Schools, Employment Workshops, Trade Houses and Promotion and Development Modules). FRT was a pioneer in the application of these instruments for the conservation and recovery of the IMH and its enhancement for tourism [60,92,99]. Thus, "it has been the children and grandchildren of miners who have carried out this rehabilitation" [92](p. 9). In total, 714 students and workers have been trained [92], many of them subsequently employed in the FRT and PMR, and self-employment has also been generated. The international economic crisis caused training funds to be reduced, and these instruments disappeared (Int01, Int12).

3.4.3. Environmental dimension

In a degraded territory, ecological aspects are not widely addressed in the IMHT [19]. The IMHT in RTMB pays less attention to the environmental aspect of the project than the economic and social aspects [46]. Recovery processes, extensive rehabilitation and restoration interventions are often not realistic in open-pit mining operations [112]. Planning is necessary to address the conservation, management and restoration of the consequences of mining and SRD [121]. Although in the current context, Atalaya Mining continues its renaturalization processes [111], in the RTMB, there was no

comprehensive recovery of the mining landscape after the cessation of activity in 2001 [46,79]. In 1998, the regional government established, with opposition from the local population, a toxic and dangerous waste landfill [79], which has continued to cause incidents and controversies, demonstrating making wrong decisions with negative impacts [18].

In the RTMB, there is no debate on environmental sustainability in the IMHT or the mine, which grows into continuous and evolutionary mining cultural landscapes [87], whose productive function mutates into didactic and recreational ones [79], differentiating between archaeological mining landscapes and living mining landscapes. However, the most exciting thing in the RTMB is a reassignment of values to the mining landscape through its protection with the declarations of PPRT (24.27% of the surface of the RTMB) and the MNMG (small size, 0.93 hectares), an accessible ecosystem from the PRM [91], linking the IMHT with the environmental dimension.

3.4.4. Political-institutional dimension

The governance context, stakeholder participation and role, local scale and leadership issues [66,95] take on particular importance in the tourism value of the IMH, as the mining spaces are conditioned by inherited social and economic structures [4].

Local participation is vital in sustainability processes [103] and SRD [71]. However, this does not occur, and there is also no "awareness of the population" (Int11). In the RTMB, there is no participation mechanism in the tourism enhancement of the IMH that guarantees sustainable, future and equitable development [57], and it lacks an effective management instrument to ensure sustainability [103]. Thus, a top-down and bottom-up coordination structure or forum is necessary (Int01, Int11). Such an approach enables the participation of different actors from different organizations and levels [4,5,126] within overall planning and organization [94]. Accordingly, it represents different interests [127] through consortia resulting from the collaboration "that will lead and promote the FRT but that would incorporate the rest of the agents in the territory" (Int06), regardless of its unlikely viability [104]. In this sense, the Cultural Park for managing the BZP [128] is an opportunity, but until now, there have been no relations between culture and tourism at the regional level.

Unlike other places [4,47] in the RTMB, no tourism planning exists [31]. In this way, the development of the IMTH is a consequence of the sum of interventions to preserve and finance the rehabilitation of the IMH. However, no planning document has a strategy and objectives (Int01, Int02, Int11). Thus, all those interviewed agreed on the potential of the IMHT in the RTMB and the need to create a tourist destination, highlight the IMH, package and market the product, but there is no agreement on how to do it [4,5], and do not apply any model because each area is different and the IMHT is unique (Int03, Int04, Int06, Int08, Int09, Int10). A critical commitment to public policies and the practice of tourism planning is necessary of the IMHT [25] to achieve the sustainable relationship between tourism and cultural heritage [103], although regional public policies focus on the legal framework and indicative policies. At the different scalar levels, joint actions have been developed without paying attention to particularities and specific situations, resulting in competition. The use of public money in multiple actions and performances without considering their viability ends up causing viable projects to lose market share [47] due to a lack of planning, integration, and complementarity.

Only FRT has international references, objectives, a plan for the IMHT (materialized in the PMR, which is growing), a strategy to achieve them and an overall vision, being a "model for other initiatives [...] and a reference" (Int12), which was recognized by other respondents (Int01, Int02, Int07). FRT is a cultural institution with local roots. Still, it is a private entity following the post-production organization model, a production and extraction plant that acquires a tourist function [23]. FTR is the engine of conservation, preservation and tourism enhancement of the IMH and is recognized by different stakeholders (Int01, Int02, Int04, Int05, Int06, Int07, Int08, Int10, Int11), being the central actor [82]. According to some informants, FTR led the processes (Int01, Int05, Int07, Int08). On the other hand, it did not exercise leadership for others and instead made decisions according to its objectives (Int06), with a growing disaffection from the central to the peripheral municipalities.

However, FRT only manages and makes decisions about its assets or those it controls. It regulates tourism activities in the PMR, applying traditional and unilateral management that generates a low-density network [82]. It has been blamed on FRT that there is HMI that cannot be visited and is not valued in the RTMB [82], but it is not the responsibility of FRT, which is not its owner. It causes, in the opinion of others, a "screen effect" of the PMR that does not encourage the development of other activities (Int06). It is not open to listening to other actors when planning its activity (Int11), and the different projects create latent conflicts between actors, making it necessary to reach agreements [126]. FRT does not manage mining assets, and its business model does not compete with local restaurants and accommodations (Int11, Int12). It does not offer these services, which differentiates it from other initiatives in which the central actor diversifies its sources of income [4], in this way, it maintains an apparent balance with those activities.

Municipalities lack powers in tourism policy in a neoliberal context and act as inhibitors or facilitators of IMHT development, providing local leadership in the face of business disinterest and top-down directives [129]. While they should play a central role in the processes [130] to evaluate projects, attract investors and know what is of interest [25], this is not the case. In the RTMB, it is difficult for municipalities to be drivers of the IMHT (Int02) because they are small and have technical, financial and personnel limitations (Int01; Int02). Furthermore, there are management difficulties due to the ownership of the IMH that is not municipal (Int01, Int04, Int08), making it a central issue [34]. Accordingly, it limits actions and requires transfer agreements (Int01, Int04) with the private sector or the state and regional administration. Only the municipality of Minas de Riotinto is active in the recovery of the IMH (Int04). The IMH and IMHT actions respond to specific and finalistic projects in which the municipalities act individually (Int01, Int04, Int06, Int10), isolated and unconnected. They do not even follow a thematic line (Int10), and the "creative solutions" [62] sometimes approach improvisation, acting according to impulses towards projects (Int04, Int06) and not responding to objectives (Int11). Sometimes, local initiatives are related only to tourism promotion [60], but with municipal visions, prioritizing the marketing of the place over the RTMB, partly due to the poor historical image of mining [61], failing to create a strong, recognizable and attractive identity, image and brand linked to effective planning [94]. There are no imperative municipal initiatives in contrast to other spaces [4]. Sometimes, heritage interventions were carried out but not opened to the public due to lack of staff or change of use (Int01, Int02) or have been used on the same resource without results [79].

Atalaya Mining is a multinational for which the IMH and IMHT are marketing and public relations tools [49,77] linked to the Corporate Social Responsibility (CSR) of the company [29,49]. Furthermore, living industry tourism shows its excellence and innovation [49], improving its image with the community that tends to feel safer, counteracting fears about pollution and environmental impacts [77], allowing knowledge transfer, performance improvement (brand loyalty, trust in the product when knowing the production process, loyalty) and work image (future employees) [59]. Thus, it is producing a narrative through the IMHT.

There is a need for sectoral and regional cooperation [4,5,9,25] since the sustainability of the IMHT is directly proportional to the interconnection between the stakeholders [3,9,10,25,31,46]. In general, the context of public-private and private-private cooperation in the RTMB has improved compared to what was studied by Perfetto & Vargas-Sánchez [82]. The positive relations between FRT and Atalaya Mining stand out, which joined the FRT Board of Trustees, overcoming the disagreements between FRT and the previous company owner (Int01, Int12). In addition, Atalaya Mining is a member of the LAG. Through FAR, it collaborates with the municipalities of the RTMB, FRT and other entities in specific actions, which include the rehabilitation of the IMH and the promotion of the IMHT [111], and these actors are the ones who develop a more positive vision (Int04, Int08). Synergies are based on mutual benefit, in which Atalaya Mining presents itself as "a good neighbour, a stable participant in community affairs" [77](p. 89). The municipalities and FRT benefitted from this cooperative relationship materialized in projects and favoured three-way cooperation agreements (Atalaya Mining/Municipality of Minas Riotinto/FRT), allowing the tourism reopening of Corta Atalaya (2021). Nonetheless, these horizontal relationships are based on the CSR

of the mining company, without a formal cooperation structure existing until now. Furthermore, the perception of FRT has improved among municipal stakeholders compared to what was observed [82], especially among the most central ones (Minas de Riotinto and Nerva) (Int04, Int08). However, it is worth considering the weight of the personal relationships of the respondents in this perception.

The competition relations stand out between the different municipalities since there are no common objectives concerning the IMHT (Int01, int06). The identity is diluted from the centre to the periphery, and there is no forum for collaboration or leadership from the disappearance of the commonwealth (Int01, Int02, Int06). There is also no collaboration or participation among tourism companies (little associationism) (Int06, Int11), becoming an issue for the management of the IMHT [130]. It is necessary to improve the relationship and participation in networks between companies and these with the FRT to increase visits [31]. FRT collaborates with catering and accommodation companies when organizing events or hosting groups (Int11).

Developing projects with internal and external actors generated a culture of cooperation [17], but through temporary networks, which concluded when the projects ended [109]. Its roots among technicians (Int01, Int06, Int09, Int12) allow collaboration in informal networks. Despite participating in networks and projects, there are no formal links with IMH managers outside the RTMB, which are often limited to signage projects. It is essential to apply "complementarity" between places with IMH to avoid competition and the creation of clusters [10] with a unified vision of the IMHT, with the involvement of actors and interlocutors to create and consolidate routes [19] and a governance structure that allows its sustainability, as seen in ERIH. Since there are matters related to recovering the isolated place [42] and generating image changes [30].

On a theoretical level, the IMHT must affirm the identity of the place [113] and contribute to its regional preservation [29], that is, "the mining identity". Since the role of social identities and the symbolic community, for the successful development of the IMHT, it is essential to build community discourses and local identity models [34]. The identity singles out the PMR [46], and there is a tourist identity at different levels, projected outwards (Int07). However, some of the stakeholders of the three central municipalities (Int01, Int04, Int06, Int08, Int11, Int12) identify with mining, the mining landscape, the IMH and the IMHT. In contrast, the peripheral municipalities identify with rural tourism (Int10). There are no references to either the IMH or the IMHT on their websites, and there was a lack of interest in participating in this study. It is partly due to the agricultural tradition of these municipalities and the concentration of resources and heritage in the three central municipalities. It is also an issue due to the negative image formed after the mining crisis, which generates disaffection [61]. Thus, the feeling of identity (Int10) is diluted in a marked localism. Its rural identity works according to the interests of the municipalities (Int01, Int12), which shows that the heritage process has not been completed or has only been partially achieved to the same extent as identity.

4. Conclusions

The IMH and the mining landscape are created, destroyed and recreated, and only the productive (mining), didactic and recreational (tourist) functions fit into it. The starting situation of the RTMB is similar to that of other post-industrial rural mining sites [4]. As a challenge, a new territorial, heritage and tourist role is claimed [17]. The enhancement of tourism value by the IMH has been achieved. The activity focuses on the PMR and makes it possible to cover the costs of rehabilitation of the IMH, its maintenance and financing. However, it has not generated a network of tourist establishments and overnight stays, as its character of an intermediate space prevails.

There is no territorial policy or strategy to guarantee the beneficial effects of tourism. The FRT is a private dynamic agent that expresses its objectives in preserving the IMH and developing the IMHT, capable of taking advantage of rural development policies. Still, it has difficulties in cooperating and generating outward dynamics. The rest of the actors act uncoordinatedly without clear and often divergent objectives. Lack of coordination demonstrates the need to create permanent strategies and networks, generating a multilevel governance system to overcome the barriers imposed by the history and geography of the place [4].

Based on the IMH, its conservation and the enhancement of tourism value, the territory is reinvented [31], generating opportunities and energizing an area in decline. Multifunctionality has been achieved, which is perfect, yet it must be framed in a much more diversified economic structure [7]. Stakeholders must have a realistic image of the possibilities and limitations of the IMHT [19], compared to expectations that forget its peripheral nature.

While notable progress has been achieved in the qualification of human resources linked to the processes and intangible profitability [33] materialized in the conservation of IMH, the influence on the SRD is minimal. However, it is limited territorially due to the concentration of the IMH and initiatives, mining awareness and the identity of the RTMB. The IMHT has broken with the paternalism of the Company but has not overcome its legacy.

The recovery of mining is no longer a promise. It is a reality and produces a change of scenario [12,13]. The institutional influence of the mines on society and the territory makes the new mining companies support the IMHT so that there is a "holistic" approach to their activity [57]. The coexistence of the IMHT and mining, which collaborate and feed each other, is viable. Yet, it is situated in the sphere of the mine's CSR, which (re)creates a narrative. The paths of monoculture lead nowhere, whereas the mine reopening is an opportunity, although it is a model of (temporary) dependency. In contrast, tourism offers continuity over time despite low economic weight. This process provides lessons for what will come after the mine and how the IMHT was almost the only activity with projection for decades, against all odds [109].

This article aims to provide a realistic view of the scope and limitations of IMH and IMHT to achieve SRD, offering valuable information to planners and policymakers. Our study shows that it is one thing for the IMHT to work and another very different thing for it to be a panacea since the tourism model and internal and external factors limit its growth. The RTMB has been and continues to be a space of extraction; in contrast, local initiatives are an opportunity for development in the context of failed results from the SRD.

The limitations of the research address (a) the lack of a participatory methodology [37] that gives voice to the local population, which allows the "identity status" to be addressed in depth [34]; (b) the limited participation of peripheral municipalities in the study.

Future research should address (a) the processes of patrimonialization and enhancement of tourism value of the IMH; (b) the perception of demand regarding the reopening of the mine; (c) demand satisfaction and the perception of the environmental dimension as determinants of overnight stays; (d) the perception of the local population about tourism and mining activities, taking into account gender issues; (e) comparisons with other mining spaces, analyzing the weight of internal and external factors.

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